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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,706	03/30/2004	Manabu Kitamura	16869B-103600US	7212

20350 7590 11/15/2005

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EXAMINER

SCHLIE, PAUL W

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/814,706		KITAMURA, MANABU	
	Examiner		Art Unit	
	Paul W. Schlie		2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-4,19-23 is/are pending in the application.
- ~~1b~~ 4a) Of the above claim(s) 2 and 5-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-4,19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>1</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-23 have been examined; with the understanding that claims 1 and 3 have been amended, 2 and 5-18 have been canceled, and 19-23 have been added.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Korngiebel et al. (5,416,914) in further view of Nagai (6,236,626).

As per claim 1, Korngiebel et al. teaches a storage system coupled to a host computer via a first interface (figure 1, elements 171/132), the storage system comprising: a second interface (figure 1, elements 120-122) coupled to a computer enabling access to storage system management; a storage controller including a processor which manages host and management access to the storage system inclusive of storage allocation, media state and access privileges (see column 3 lines 1-35), but does not explicitly teach that a log of management and/or I/O operations may be maintained. Nagai, teaching a similar storage system (see figure 2, column 1 lines 6-10, and column 2 lines 23-32), does teach that a history log of storage operations may be maintained. It is considered obvious to one of ordinary skill in the art to combine the two for the benefit of maintaining a history of maintenance and/or I/O operations, for the benefit of subsequent review as may be desired.

As per claim 3, being dependant on claim 1, Nagai further teaches that history logs may be stored in non-volatile random access memory (see column 3 lines 56-60). It would be obvious to further combine the two, for the benefit of storing log information in non-volatile random access storage for potentially fast modifiable access if desired.

As per claim 4, being dependant on claim 1, both Korngiebel et al. and Nagai further teach that the storage may be composed of disk drive arrays (see Korngiebel et al. column 15 lines 24-26, and Nagai column 3 lines 14-15).

As per claim 19, being dependant on claim 1, Korngiebel et al. further teaches that controllable system management attributes include read-only protection (see column 15 lines 50-53). It is considered obvious to one of ordinary skill in the art to include modification to storage protection attributes in log files if maintained, for the benefit of their review as may be desired.

As per claim 20, being dependent on claim 1, Nagai teaches that I/O operations may be logged (see column 4 lines 15-25).

As per claim 21, being dependant on claim 1, although neither reference teaches that management operations may be stored separately from I/O operation history logs, it is considered obvious to one of ordinary skill in the art to store them either separately and/or merged as may be desired and/or most convenient.

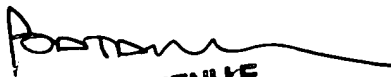
As per claims 22-23, being dependent on claim 1, it is considered obvious to one of ordinary skill in the art to log logical volume management attribute operations in general, within such a system.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


PIERRE BATAILLE
PRIMARY EXAMINER